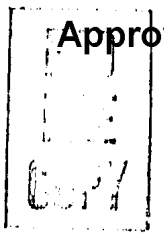

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SOVIET BLOC INTERNATIONAL GEOPHYSICAL YEAR INFORMATION

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SOVIET BLOC INTERNATIONAL GEOPHYSICAL YEAR INFORMATION

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I. UPPER ATMOSPHERE

Theory of Scattering of Sunlight in the Atmosphere

Methods for an approximate solution of basic equations on the scattering of light in an isotopically scattering atmosphere were developed, and the results of a numerical solution of the problem with different values of the physical parameters were presented in a monograph by Ye. S. Kuznetsov and B. V. Obuinskiy ("Resultaty Chislennogo Resheniya Integral'nogo Uravneniya Teorii Rasseyaniya Sveta v Atmosfere" (Results of the Numerical Solution of an Integral Equation of the Theory of the Scattering of Light in the Atmosphere) Tr. Geofiz, In-ta., No 4, 1949)

The optical characteristics of a real atmosphere are changed with altitude and especially rapidly with time. It was deemed necessary to obtain a solution of the problem on the scattering of light in the atmosphere with more general suppositions concerning the laws of scattering than were made in the above-mentioned monograph.

Raschet Yarkosti Sveta v Atmosfere pri Anizotropnom Rasseyanii, Chast' I (Calculation of the Brightness of Light in the Atmosphere in the Presence of Anisotropic scattering, Part I) is regarded by the authors as an attempt for a certain approximation to real conditions for the propogation of light in the Earth's atmosphere and an attempt to explain to what extent it is necessary to calculate nonisotropic scattering. The work was conducted in the Institute of the Physics of the Atmosphere of the Academy of Sciences USSR by a collective of associates of the Laboratory of Atmospheric Optics. The work contains the results of the calculation of the intensity of sunlight scattered in the atmosphere for the case of anisotropic scattering with different physical parameters and scattering functions. The solution of integral-differential equations for a theory of the transmission of radiation in an anisotropically scattering medium was obtained by the method of successive approximations.

In the work, only part of the calculations embracing the most characteristic cases of the optical state of the atmosphere is presented. The remainder of the material and also tables of the coefficients of fogginess and certain applications for aerial surveying and the theory of visibility will be given in the second part of the work. ("Raschet Yarkosti Sveta v Atmosfere Pri Anizotropnom Rasseyanii, Chast' I.,by Ye. M. Feygel'son, M. S. Malkevich, S. Ya. Kogan, T. D. Koronatova, K. S. Glazova, and M. A. Kuznetsova; Moscow, Trudy Instituta Fiziki Atmosfery Akademii Nauk SSSR, No 1, 1958)

Study on Distribution of Stars in Photoplate Emulsions

The distribution of stars in the plane of an emulsion was studied by a statistical method. The relationship of the distribution to the height above sea level, the atomic number of the absorber and the number of rays of the selected stars were obtained. The possible mechanism of the formation of near star pairs is discussed. Investigation of the simultaneous formation of previously selected nearby stars showed that the statistical method gives only the upper limit of the value of the observed effect.

It was found that the distribution of stars for small distances (up to one millimeter) differed from Poisson's distribution. The effect connected with many-rayed stars also increases with height above sea level. The magnitude is practically nondependent on the absorber's atomic number. Investigation of the simultaneous formation of nearby stars leads to the conclusion that their genetically connected media is smaller than obtained in the statistical study of the effect. The supposition that "connected stars" are formed by collimate showers is not experimentally supported. The mutual location of stars and the orientation of their rays gives qualitative evidence of the genetic connection of stars in a number of cases. ("Investigation of the Spatial Distribution of Nuclear Disintegrations by the Thick-Plate Method," by A. A. Loktionov, V. I. Stafeyev, and Zh. S. Takibayev; Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 10, Oct 58, pp 49-59)

II. METEOROLOGY

Small Atmospheric Oscillations and Adaptations of the Meteorological Field

A general classification of the principal types of dynamic processes in the atmosphere (horizontal vortex movements, gravitational and acoustical waves) is given on the basis of the solution of the problem of small oscillations of a baroclinic atmosphere. A general form of invariant is found, with the aid of which a stationary state of the atmosphere can be calculated with arbitrary initial data, without analyzing the wave processes causing a changeover of the field. The "filtering" role of the quasistatic approach is explained: it "filters out" internal acoustical waves and somewhat increases the frequency of gravitational waves. It is particularly shown that the time for establishing a quasistatic equilibrium in the atmosphere consists of only several minutes. ("Small Oscillations of the Atmosphere and Adaptations of Meteorological Fields," by A. S. Monin and A. M. Obukhov, Institute of the Physics of the Earth, Academy of Sciences USSR; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 11, Nov 58, pp 1360-1373).

Czechoslovak Radar Clinometer

A type of clinometer designated as the "TNR" has been installed at the Ruzyne Air Field in Prague. The instrument measures the height of clouds from 70 to 1,500 meters with a precision of about 10 meters. The instrument is a pulse radar consisting of a transmitting-receiving unit, a control mechanism, and a measuring case. At the airfield, this instrument has been supplemented with a remote control device and an instrument for recording the measured values. ("Cloud Measurer at Air Field;" Prague, Zemedelske Noviny, 26 Oct 58, p 4)

III. GRAVIMETRY

Effect of Inclination on Gravimeter Null Point

A shifting of the null point of GAE gravimeters during field operations when the instruments were transported by plane was thought to be due to the inclined position of the gravimeters in their containers during transport. It was theorized that the nonlinearity of the null shifting during the working day arose as a result of inclination, since it was possible that additional bending and stretching tensions arose or that there occurred a separation of the alcohol and water in which the quartz system is immersed.

For verifying this theory, observations were conducted with two SN-3 gravimeters in the gravimetric laboratory of the Moscow Institute of Engineers of Geodesy, Aerial Surveying, and Cartography.

Both gravimeters were inclined in a vertical plane passing through the thread of the quartz system at an angle of 3-5 degrees the evening prior to the observations. The next morning, the instruments were placed in a normal position, after which regular readings were made every 20-30 minutes for 8-10 hours. Several such experiments were conducted. Results of the observations were in agreement in the different experiments with both instruments.

Shifting of the null point was inversely proportional to the square root of the time from the beginning of the experiment.

Further observations were conducted by V. N. Karikova and A. I. Morozova in a broadened program using 4 SN-3 gravimeters. Certain regularities were established which were characteristic for all four gravimeters.

The investigations did not determine the true reason for the aftereffect of inclination, but did establish a correlation of the inclination with the nonlinearity of null shifting and made the following conclusions possible:

1. The SN-3 gravimeter must be kept in a near-horizontal position (if possible within 2 degrees) while being transported or during the intervals between trips.

2. In the aftereffects of gravimeter inclinations of 3 degrees and more, observations made in the first 1½-2 hours after changing the instrument from the inclined to normal position have less weight than subsequent observations.

3. Investigation of null shifting while the instrument is in the inclined position is of great practical interest in connection with the use of a method of graduating gravimeters by inclination.

4. For an explanation of the true reasons for the aftereffects of inclination (redistribution of thread tension, separation of liquids, or any other), the experimental investigation of this phenomena in the Norgrad and other quartz thread gravimeters is of interest. It is expedient in these investigations to explain the effect of the consequences of inclination at angles of more than 15 degrees (up to 90 degrees), and also the consequences of long inclination in the plane perpendicular to the thread of the quartz system. ("Shifting of the Null Point of the SN-3 Gravimeter as a Result of Inclination," by P. F. Shokin, Moscow Institute of Engineers of Geodesy, Aerial Surveying and Cartography; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 11, Nov 58 pp 1399-1401).

IV. SEISMOLOGY

Use of Earthquake Intensity Scale in USSR Stations

The first experience in the USSR of using the earthquake intensity scale M (magnitude) which was first introduced into seismic practice by K. Richter and B. Gutenberg, was in 1953, when work was begun on the compilation of a seismic atlas for the USSR.

The term "magnitude of an earthquake" cannot be translated into the Russian language literally, so on the suggestion of Ye. F. Savarenskiy, the term "intensivnost' zemletryaseniya" (intensity of an earthquake) is employed. The latter corresponds to the Russian term, "ball'nost' zemletryaseniya."

The magnitude of an earthquake is determined in the USSR on the basis of the surface waves only.

It was found that the formulas

$$M = \lg\frac{A}{T} - \lg\left(\frac{A}{T}\right)_0 \qquad (1)$$

where A is the maximum displacement of the soil in surface waves, and T is the period of the waves corresponding to it (for different epicentral distances and for earthquakes of different intensity T values of approximately 2 up to 3 seconds can be accepted); and

$$M = \lg A - \lg A \qquad (2)$$

where A represents the same quantity as in formula (1), are more suitable than Gutenberg's formula,

$$M = \lg A_{20} - \lg A_{20} + C + D,$$
$$\lg A_{20} = -1{,}818 - 1{,}656 \lg A^{\circ},\ 15^{\circ} < \Delta < 130^{\circ}, \qquad (3)$$

where A_{20} is the maximum displacement of the soil (in microns) in surface waves with a period of 20 seconds, C is the station correction, and D is the correction depending on the depths of the focus and other earthquake parameters. This formula /Gutenberg's/ could not be used, since, for a large number of distant earthquakes, seismic stations in the USSR did not register waves with a period of 20 seconds.

The equation

$$M_A - M_{A/T} \approx 0.05(M-6) \qquad (4)$$

(here $M_{A/T}$ is the value of the intensity determined according to (1), and M_A, according to (2), gives the statistical correlation between these two methods of magnitude determination. No corrections to M are used. This, says Solov'yev, Institute of the Physics of the Earth Academy of Sciences USSR, author of the article, is probably the main reason for the systematic discrepancy between the values of M published in Soviet bulletins and in bulletins of other countries. It has been found that the coast stations on the Pacific Ocean, when compared with other USSR stations, give too small values of M for Pacific Ocean earthquakes, especially for those of the Kamachatka-Japan region.

A preliminary study indicates that the negative values of the differences M at the Far East stations are characteristic for the earthquakes of the Kuril-Kamchatka zone and for the majority of the other

seismic zones of the Pacific Ocean. At the same time, the difference in M-values for continental earthquakes are observed, on the average, to be the opposite. ("Some Results of the Application of the Earthquake Intensity Scale in USSR Seismic Stations," by S. L. Solov'yev, Institute of the Physics of the Earth, Academy of Sciences USSR; Prague, Studia Geophysica et Geodaetica, Ceskoslovenska Akademie Ved, No 1, 1958, pp 40-45).

Apatiti Station Conducts Studies on Seismicity in Arctic

The seismic station Apatiti of the Kola Affiliate of the Academy of Sciences USSR participates in the IGY program by conducting studies on the seismicity of the Arctic. Toward the beginning of observations, the station was transferred into a specially constructed building and was equipped with the most newest instruments making it possible to conduct complete observations of earthquakes and microseisms. Installed in the station are a set of general type D. P. Kirnos system instruments and a set of regional type D. A. Kharin system instruments which make around-the-clock recordings possible.

Results of observations are regularly transmitted to the scientific centers in Moscow and Leningrad. Materials of the work of the seismic station are published in a special publication, "Bulletin of Earthquakes and Microseisms," once every 6 months. ("In the Kola Affiliate of the Academy of Sciences USSR,"; Petrozavodsk, Izvestiya Karel'skogo i Kol'skogo Filialov Akademii Nauk SSSR, No 1, 1947, pp 119-120)

V. GEOLOGY

Heat Conductivity of the Earth's Mantle

A detailed study of the coefficient of the heat conductivity of the Earth's mantle is made in an article which appears in a Soviet scientific periodical. The coefficient of heat conductivity for the mantle is formed from the lattice part, caused by the usual mechanism of heat conductivity in crystals -- by diffusion of thermal excitations of phonons, and the radiant portion, caused by the transfer of heat by infrared electromagnetic oscillations.

A formula giving the relationship of temperature and pressure was obtained for the coefficient of heat conductivity of the lattice portion. For deriving coefficients of heat conductivity of the radiant portion a general gas kinetic formula was used. ("Coefficient of Heat Conductivity of the Earth's Mantle," by V. N. Zharkov, Institute of the Physics of the Earth, Academy of Sciences USSR; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 11, Nov 58, pp 1342-1350

VI. GLACIOLOGY

Book on Modern Glaciation on Zailiyskiy Alatau

A monograph by N. N. Pal'gov, contains the characteristics of modern glaciation on the Zaliyskiy Alatau mountain range, and a description of large and small glaciers. In it are given for the first time, the full nature of modern glaciation in its interrelation with surrounding physico-geographical conditions; the uniformity of glacier thawing from meteorological factors (mainly from the temperature of the air) are established; the problems of glacier discharge and its role in feeding rivers in different regions of the flow and in different periods of time; the magnitude and extent of the mountain's glaciers and the latter's influence on river discharge; the balance of the most investigated glaciers, etc., are explained. Many manifestations of the life-activity of glaciers are represented by mathematical formulas expressing this or that relationship to natural factors.

The book is based on materials collected by different explorers, including the author himself, who has been engaged in the study of glacier data for 30 years. (Sovremennoye Oledeneniye v Zailiyskom Alatau [Modern Glaciation in Zailiyskiy Alatau] by N. N. Pal'gov, Alma Ata, 1958; reviewed in Vestnik Akademii Nauk Kazakhskoy SSR, No 10, Oct 58, p 99)

Organization of Institute of Oceanology, Academy of Sciences USSR

"In connection with the decree of the Council of Peoples Commissars USSR of 24 December 1945, the Academy of Sciences USSR in January 1946 reorganized the Laboratory of Oceanology, Academy of Sciences USSR into the Institute of Oceanology, Academy of Sciences USSR.

The Presidium of the Academy of Sciences USSR determined the following:

"The basic aims of the Institute of Oceanology shall be to develop the theoretical problems of oceanology, to conduct research on the oceans and seas on the supposition that there is a singular occurrence in seas and oceans of physical, chemical, biological, and geological processes, and to conduct special research on the problem of the fluctuation of the level of the Caspian Sea." Through these studies and its special organization, the Institute of Oceanology is capable of conducting studies on all facets of oceanology. It is through this that the institute differs from other specialized scientific establishments concerned with oceanology. It is well-known that the Maritime Hydrophysical Institute, Academy of Sciences USSR, is studying only physical processes; the State Oceanographic Institute of the Main Administration of Gidrometsluzhe is studying only hydrometeorological phenomena, and the All-Union Institute of Marine Fish Economy and Oceanography is studying only ichthyological and biological problems.

There is, however, necessity for a complex study of both specific regions of the ocean or seas and the study of the combined influences of physical, chemical, and biological phenomena and processes.

Therefore, the organization of the institute has the following divisions and laboratories:

Division of Physical Oceanography (Otdel Fizicheskoy Okeanografii), Prof A. V. Dobrovol'skiy, Doctor of Geographical Sciences, head of division.

Laboratory of Marine Meteorology (Laboratoriya Morskoy Meteorologii), D. A. Drogaytsev, Doctor of Geographical Sciences, head of laboratory.

Laboratory of the Dynamics of the Sea (Laboratoriya Dinamiki Morya), Prof V. B. Shtokman, Doctor of Physicomathematical Sciences, head of laboratory.

Chemical Division (Khimicheskiy Otdel), Prof S. V. Bruyevich, Doctor of Chemical Sciences, head of division.

Laboratory of Bottom and Shore Topography (Laboratoriya Rel'yefa Dna i Beregov) Prof V. P. Zenkovich, Doctor of Geographical Sciences, head of laboratory.

Laboratory of Bottom Deposits (Laboratoriya Donnykh Otlozheniy) Prof P. L. Bezrukov, Doctor of Geologico-mineorological Sciences, head of laboratory.

Laboratory of Planktons (Laboratoriya Planktona), Prof P. I. Usachev, Doctor of Biological Sciences, head of laboratory.

Laboratory of Benthos (Laboratoriya Bentosa), L. A. Zenkevich, Doctor of Biological Sciences, Corresponding Member of Academy of Sciences USSR, head of laboratory.

Laboratory of Nektons (Laboratoriya Nektona) Prof T. F. Rass, Doctor of Biological Sciences, head of laboratory.

Laboratory of Marine Borers and Fouling (Laboratoriya Morskikh Drevotochtsev i Obrastaniy), P. I. Ryabchikov, Candidate of Biological Sciences, head of laboratory.

Division of Marine Engineering (Otdel Morskoy Tekhniki), N. N. Sysoyev, Candidate of Technical Sciences, head of divisions.

Laboratory of Marine Electronics (Laboratoriya Morskoy Elektroniki), N. V. Vershinskiy, Candidate of Technical Sciences, head of laboratory.

The Director of the Institute is Prof V. G. Kort. His deputies are Prof V. G. Bogorov and N. N. Sysoyev.

The Institute of Oceanology has two experimental stations in the region of Gelendzhik on the Black Sea and another on the Caspian Sea.

The Institute of Oceanology also has five expeditionary ships, the largest of which is the Vityaz'. This ship has special equipment which permits it to conduct research in the deepest parts of the ocean, which is over 10 kilometers. The institute also conducts research on other ships which belong to various departments.

The following are the basic problems on which the institute is currently conducting research:

1. Geography of antarctic waters.

2. Geography of the Pacific Ocean.

3. Transport-geographical characteristics of Far Eastern waters.

4. General academic problems: the laws of the dynamics of numbers; the behavior and distribution of fish in connection with conditions of their existence; which is also partly developed by the Institute of Oceanology.

5. The institute participates in the development of problems of the dynamics of waters and ice of the Arctic; it conducts this work together with the Arctic Institute "Glavsevmorput."

6. Dynamics of sea currents and movements of waters.

7. Geological structure, history, and regularity of deposit formation in seas and oceans.

8. Processes and regularities in the formation of shore zones of seas.

9. Biology of marine borers and the fouling of ships and hydroengineering structures.

10. Development of methods and means for oceanographic research.

The Institute of Oceanology is staffed with 18 doctors of sciences and 65 candidates of sciences.

The Institute of Oceanology, Academy of Sciences USSR, conducts research expeditions in the Pacific, the Indian Ocean, and the Antarctic; it will participate in research of the Atlantic and the North Arctic Ocean. In addition, the institute operates in the Baltic Sea, the Black Sea, the Caspian Sea, the Sea of Japan, Sea of Okhotsk, and the Bering Straits. The majority of work is accomplished jointly with various institutes of the Academy of Sciences USSR, the Hydrometeorological Service of the USSR, the fish industries, the Maritime Fleet, and with other departments. The address of the institute is Moscow, Zh - 127, Luzhnikovskaya Ulitsa, 8. ("Institute of Oceanology, Academy of Sciences USSR"; Moscow, Byulleten' Mezhduvedomsevennoy Okeanograficheskoy Komissii Pri Prezidiume AN SSSR, No 1, 1958, pp 21-23)

Drift Station Severnyy Polyus-7

The ice floe with the drift station Severnyy Polyus-7 is now drifting about 1,200 kilometers from Nagurskaya, on Zemlya Aleksandra, and 300 kilometers from the North Pole, in the sector between Greenland and the Sverdrup Islands. There are almost 30 persons wintering at the drift station. ("On the Islands of the Arctic;" Moscow, Izvestiya, 26 Nov 58)

The ice floe carrying the drift station has been greatly reduced in size since the station was originally established. The area was formerly 3.5 square kilometers and has now been reduced to 750 square meters. The breakup of the ice continues and new cracks appear from time to time.

At present, the ice floe is drifting over the submarine Lomonosov Range. The scientists of Severnyy Polyus-7 have made detailed studies of the submarine mountain slopes and of the sedimentary rocks on the ocean bottom. ("In the Center of the Arctic," Moscow, Pravda, 30 Nov 58)

Climate Changes Noticeable in Arctic

At present, a general warming of the climate is being observed on the Earth, which is especially noticeable in the Arctic. The mass of arctic ice is gradually moving away to the north. For example, the Semenovskiy Island, consisting completely of ice, was 15 kilometers long in 1923, and is now only one kilometer long. The Lyakhovskiye ice islands are gradually disappearing. In the USSR Arctic sector, the ice area has been reduced by more than one million square kilometers. The retreat of alpine glaciers is also a sign of the general warming process.

A further warming will lead to changes in the continental outlines and in the geography of the fauna. Birds are now found in the northern part of the USSR which were not encountered in those regions before. Codfish and herring are caught much farther north than in previous years.

The mean annual temperature is gradually rising. Some scientists consider that the reason for the warming of the climate is an intensification of solar radiation. Other assume that the rise in temperature is caused by the burning of large quantities of coal and petroleum, as a result of which carbon monoxide accumulates in the upper atmosphere, thus forming a kind of "warm sheath" around the Earth. ("The Warming of the Climate," Riga, Sovetskaya Latviya, 19 Sep 58)

Tasks of Fourth Antarctic Expedition

In addition to continuing the extensive explorations in the area of Mirnyy and at the interior station Vostok, the Fourth Antarctic Expedition will have the task of organizing a new scientific base on the Coast of Queen Maud Land. It will be established at a distance of over 3,000 kilometers west of the Pravda Coast, about 10 degrees East longitude, between the Norwegian and Belgian south polar bases. The new station will be named in honor of Mikhail Lazarev, the Russian navigator.

The fourth Soviet expedition is traveling to the Antarctic on the Ob' under Capt A. Dubinin. This ship has already made several voyages to the Antarctic. A new passenger diesel ship, the Mikhail Kalinin, under Capt A. Borodin, is sailing on an Antarctic voyage for the first time. The ships will carry thousands of tons of freight, including modern scientific equipment, prefabricated houses, construction materials, various other types of equipment, food, and fuel. There will be two new aircraft: one heavy twin-engine IL-12 and one light single-engine AN-2 plane. The IL-12 is equipped with skis made specially to order. The same kind of skis are being shipped for the other planes of this type which are now in Mirnyy. The aerial detachment will be headed by the well-known polar pilot B. Osipov.

Three new, heavy, oversnow caterpillar tractors, called "Khar'kovchanka," will be aboard the Ob'. These vehicles were produced as a result of a close 3-year cooperation between workers of the Khar'kovskiy Sovnarkhoz plant and members of Soviet Antarctic expeditions.

Over 100 Soviet polar workers will winter in Antarctica, including meteorologists, aerologists, glaciologists, magnetologists, seismologists, gravimetrists, pilots, navigators, radiomen, tractor drivers, physicians, and men of many other different professions. Most of them have had a great deal of experience in the Arctic, and many of them have previously been in Antarctica.

The aerometeorological detachment of the continental expedition headed by V. Shlyakhov, Candidate of Physicomathematical Sciences, plans to collect material for the study of atmospheric circulation and climate of the Antarctic, and to determine the influence of the glacial continent on the general circulation of the atmosphere, with the aim of improving methods of weather forecasting.

The glaciological detachment, headed by B. Savel'yev, Doctor of Geological-Mineralogical Sciences and professor of the Moscow State University, will conduct a series of scientific research activities during the long transcontinental expedition of the Soviet polar scientists. The route will lead through the three poles of Antarctica: the south geomagnetic pole, the south geographic pole, and the pole of relative inaccessibility. The trip over a distance of 6,000 kilometers will be made with the "Kharkovchanka" oversnow vehicles.

The Soviet explorers will leave Mirnyy early in 1959. After 2 months, the tractor column is to reach the area of the south geomagnetic pole. Scientific studies will begin in the area between stations Komsomol'skaya and Vostok. The vehicles will be stored at Vostok until the next Antarctic spring, while the members of the expedition will fly back to Mirnyy. In October, they will return to Vostok, from where the sled-tractor train will continue on its way into the interior of the continent.

From Vostok, the polar explorers will proceed to the south geographic pole, where they will visit the US station Amundsen-Scott. The route will then lead to the pole of relative inaccessibility. In the event serious difficulties should be encountered between this point and the station Lazarev, the members of the expedition will return to Mirnyy. However, if conditions are favorable, they will proceed to Queen Maud Land, where they will complete their transcontinental expedition in the antarctic fall of 1960.

During the trip, the scientists will conduct measurements of the ice thickness to determine the nature of the subglacial relief, the volume of the glacier, and the dissected condition of the ice layer. They will carry out this work with the help of seismic soundings and gravimetric and magnetic profiling. As a result of a completed glaciological cross-section across the central regions of the continent, the Soviet scientists will be able to summarize the results of all scientific ice reconnaissance conducted by Soviet and foreign expeditions. In particular, it may become possible to solve the basic problem which interests scientists of many countries at this time, i.e., whether Antarctica is a continent or an archipelago covered by a huge ice cap.

Members of the geophysical detachment, headed by B. Bryunelli, Candidate of Physico-Mathematical Sciences, will continue their regular magnetic, ionospheric, and seismic research, as well as observations of auroras, cosmic rays, and earth currents.

After unloading at the Mirnyy observatory, the crew of the Ob' will sail to the west, to Queen Maud Land. Here the seamen and polar scientists will disembark and will begin to set up the station Lazarev. They will assemble two panel houses, a radio station, and an electric power station and equip an aerological pavilion, meteorological and glaciological observation platforms, and a glaciological laboratory. The station Lazarev will conduct aerometeorological, glaciological, and geographic research. The new base will be manned by seven persons, headed by Yu. Kruchinin, a geographer and associate of the Arctic and Antarctic Scientific Research Institute.

While the station Lazarev is under construction, a group of four scientists, with the help of an AN-2 airplane and a MI-4 helicopter, will conduct geological and geographical research in the mountain area of Queen Maud Land. A group of polar scientists, headed by Prof M. Ravich, Doctor of Geological-Mineralogical Sciences, will take part in these investigations. Most of the scientists have already worked in Antarctica.

Aboard the Ob' there are also ice specialists, oceanologists, geophysicists, and aerometeorologists. They will conduct scientific observations during the long voyage. It is planned to take deepsea oceanological stations in the sections of Queen Maud Land -- South Sandwich Islands -- South America -- English Channel. The ice and hydrological detachment will be headed by V. Buynitskiy, a polar explorer who took part in the drift of the steamer Georgiy Sedov.

Together with Soviet scientists, expeditions of the US, Australia, France, Great Britain, Belgium, Norway, New Zealand, and other countries, will continue scientific research in the Antarctic. As previously, the Soviet expedition will maintain contact with the scientists of the US, Australia, France, Great Britain, Norway, and other countries. There is no doubt that the combined efforts of scientists of many countries in the study of Antarctica, which was begun successfully during the IGY, will be completed with excellent results and will help to solve important scientific problems. ("The Banner of Science over Antarctica," by A. Dralkin, chief of Fourth Complex Antarctic Expedition; Moscow, Vodnyy Transport, 25 Nov 58)

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